

AMENDMENTS TO THE DRAWINGS

Submitted herewith please find two (2) sheets of replacement drawings in compliance with 37 C.F.R. § 1.84. The Examiner is respectfully requested to acknowledge receipt of these drawings.

The submitted drawing is intended to replace the drawings previously submitted.

Attachment: Replacement Sheets: Two (2)

REMARKS

Claims 1-4, 6 and 10 are canceled. Therefore, claims 5, 7-9 and 11-18 are pending in the application. Claims 1-18 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement. Claims 1-3, 5-6, 8, 11-12 and 16 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hiromoto (JP Pub. No. 2002-211219). Claims 4, 7, 9, 10, 13-14 and 17 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hiromoto (JP Pub. No. 2002-211219) and further in view of Mackness (US Patent No. 6,902,136 B2). Claim 18 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hiromoto (JP Pub. No. 2002-211219) and/or Mackness (US 6,902,136 B2) as applied to claims 6 or 10 above, and further in view of Balzer et al (US 6,217,683 B1).

Preliminary matters

The Examiner notes that several of the references cited on the IDS submitted on May 2, 2006 were allegedly not supplied or allegedly have no translation. The citations have been lined-through on a PTO-1449 form. Applicant submits a duplicate copy of the SB/08 form including the foreign patent documents that were lined through by the Examiner in the Office Action dated December 24, 2008. Please note that the Applicant is not resubmitting the documents that have been acknowledged by the Examiner in the Office Action dated December 24, 2008. Applicant respectfully requests that the enclosed documents be acknowledged and that the duplicate copy of the SB/08 be initialed as the English language abstracts of the foreign language satisfy the concise explanation requirement under 37 C.F.R. § 1.98(a)(3).

Objection of amendment filed under Article 34 Amendment PCT

The Examiner maintains that the amendment filed under Article 34 Amendment PCT introduces new matter into the disclosure. In addition, the Examiner maintains that the added

material “that the sensor device are provided with a communication device for communicating with other sensor device” is not supported by the Specification as filed. Applicant, however, disagrees with the Examiner.

The Specification supports communication between a sensor device and other sensor devices. Specifically, the claim features of claims 1, 2, 5 and 6 are fully supported on page 16, first full paragraph of the Specification (emphasis added):

Each of the sensor modules 20 comprises a sensor and communication means corresponding to an RFID chip. More specifically, the sensor module comprises a sensor 21, a **communication module** having a modulation/demodulation circuit for communicating with the above base station 30 and **other sensor modules 20** and a power regenerating circuit for receiving a radio wave transmitted from the above base station 30 to generate power voltage for driving the above sensor 21, and an antenna 23 for transmission and reception. 21A denotes a pressure sensor for detecting the inside pressure of the tire, installed in the air chamber of the tire 1, 21B a temperature sensor for detecting the temperature of air filled in the tire 1, and 21C an acceleration sensor for detecting vibration applied to the tire 1, installed on the inner wall of a tire tread portion. The sensor module 20D is a spare module having no sensor.

With the above, Applicant submits that there is clear support for claims 1, 2, 5 and 6 wherein the sensor devices communicate with each other. Applicant also points out that the above paragraph clearly states that the communication module in a sensor module communicates with other sensor modules.

Applicant, therefore, requests the Examiner to withdraw the objection.

Drawings

The Examiner maintains that according to 37 CFR § 1.83(a) the drawings must show every feature of the invention specified in the claims. More specifically, the Examiner states that

the claimed communication between the sensor devices must be shown or the feature(s) canceled from the claim(s).

Although Applicant submits that Fig. 1 shows communication among sensor modules through dotted lines, Applicant amends Figure 1 to include arrows on both ends of the dotted lines to overcome the objection under 37 CFR § 1.83(a).

In addition, with respect to Figure 5, Applicant notes that the car control device 40 and the power source 41, as mentioned in the specification, are installed on the car body side and the base station 70 and the sensor modules 60A, 60B and 60C are installed on the tire side.

Applicant amends Fig. 5 accordingly.

Rejection of claims 1-18 under § 112, first paragraph

The Examiner states that claims 1-18 are rejected under § 112, first paragraph, as failing to comply with the enablement requirement. More specifically, the Examiner states that the communication between a sensor and another sensor is not supported by the specification as filed and that the specification amended does not provide any details pertaining to this communication.

According to MPEP § 2164.02 when considering the factors relating to a determination of non-enablement, if all the other factors point toward enablement, then the absence of working examples will not itself render the invention non-enabled. In the current application, factors such as a communication module and an antenna point towards enabling the sensor modules to communicate with each other. Furthermore, although the Examiner maintains that the Specification as amended does not provide any details pertaining to the communication between the sensor modules, Applicant points out that according to the MPEP § 2164.04, an Examiner must provide a reasonable explanation as to why the scope of protection provided by a claim is

not adequately enabled by the disclosure. Further, Applicant maintains, as indicated above that the communication between a sensor with another sensor is fully supported by the specification as filed. Therefore, one skilled in the art can make and use the claimed invention without undue experimentation.

For at least the reasons submitted above, Applicant submits that claims 1-18 comply with § 112, second paragraph, and request the Examiner to withdraw the rejection.

Rejection of claims 1-3, 5-6, 8, 11-12 and 16 under § 103(a) over Hiromoto

Claims 1-3, 5-6, 8, 11-12 and 16 are rejected as allegedly being obvious over Hiromoto based on the reasons set forth on pages 4 and 5 of the Office Action. Applicant cancels claims 1-4, 6 and 10. Applicant submits the following in traversal.

Claim 5

Applicant submits that claim 5 is patentable. Applicant notes that according to the tire sensor devices of amended claim 5, the intra-tire LAN, which can communicate in only an interior of the tire, is built by the plurality of sensors and the base station. Thereby, each of sensor devices can be controlled so as to measure tire condition in accordance with a timing signal from the base station. Further, data including the tire condition measured in each of sensors can be transmitted to the vehicle body side. The effect of the above exemplary embodiment is not disclosed or suggested by Hiromoto.

Specifically, since the base station is arranged in the interior of the tire, while both of the first antenna (that is the antenna of the internal communication device of the base station) and the antenna of the communication device of each of sensor devices are arranged in the tire, communication between the base station and each of sensor devices can be performed in the interior of the tire (i.e. communication not crossing the tire). Therefore, the above exemplary

embodiment leads to a decreased effect due to the tire construction element, especially the steel cord, so that reliability of signal can be improved.

In addition, the second antenna (that is the antenna of the external communication device of the base station) is arranged on the opposite side to the tire air chamber side of the wheel so that an effect due to the tire construction element can be decreased with respect to communication from the base station to the car body side. Thereby, condition of the tire detected in each of sensor devices can be transmitted to the car body side exactly. Applicant, on the other hand, notes that Hiromoto does not disclose or suggest an antenna of transmitter 9 at all. Since the transmitter 9 of Hiromoto merely transmits signals from sensor 5, 6 and 7 to the receiver 10 regularly, Applicant concludes that the transmitter 9 does not corresponds to the base station according to the present invention.

Applicant submits that Hiromoto fails to disclose and suggest the first antenna of the base station, which is arranged in the tire air chamber side of the wheel and the second antenna of the base station, which is arranged on the opposite side to the tire air chamber side of the wheel. In the view of the above, Applicant respectfully submits that claim 5 is not obvious over Hiromoto.

For at least the reasons submitted above, Applicant submits that claim 5 is patentable.

Claims 7-9 and 11-18, which depend from claim 5, are patentable at least by virtue of their dependencies.

Claim 16

Claim 16, which depends from claim 5, is patentable for at least the reasons submitted above and by virtue of its dependency.

Further, with respect to claim 16, the Examiner maintains that it would have been obvious to include a sensor module without a sensor so that additional parameters may be added

at a later date. Applicant notes that additional sensors to find a state of the tire would require additional transmission and processing by the transmitter 9 and receiver 10. In addition, since Hiromoto claims that the sensors 5, 6 and 7 help solve the alleged problems such as finding an accident when some accident takes place, one would not have been motivated to include another sensor to solve the same problem. Applicant submits that the Examiner's sole basis for the argument uses impermissible hindsight reasoning based on the Applicant's disclosure and there is no suggestion why one would have been motivated to include a sensor module without a sensor in Hiromoto.

Claim 16, which depends from claim 5, is patentable for at least the reasons submitted above and by virtue of its dependency.

Rejection of claims 4, 7, 9, 10, 13-14 and 17 under § 103(a) over Hiromoto in view of

Mackness

Claims 4, 7, 9, 10, 13-14 and 17 are rejected as allegedly being obvious over Hiromoto in view of Mackness based on the reasons set forth on page 6 of the Office Action. Applicant traverses these rejections at least based on the following reasons.

First Applicant argues that dependent claims 7, 9, 13, 14 and 17, which depend from claim 5, are patentable at least by virtue of their dependencies. Mackness does not make up for the deficiencies of Hiromoto.

Claim 14

Further, Applicant submits that claim 14 is not obvious over Hiromoto in view of Mackness for the following reasons. First, the Examiner maintains that "a sensor with means for storing power has been addressed above". Applicant, however, disagrees with the Examiner. In the rejection of claim 4, the Examiner states that Hiromoto does not teach sensor devices that are

driven by radio waves from the car body and cites Mackness to make up for this deficiency.

Applicant notes that Mackness merely teaches a sensor that uses an extremely low power RF transmitter to communicate with the hubcap transceiver (paragraph [0006]) and fails to disclose or suggest that the sensor device stores power.

Second, the Examiner maintains that the Applicant has provided no details regarding the angle sensor and concludes that the angle sensor is a well known, conventional part. Applicant points out the claim 14 provides enough detail in that a predetermined sensor device is provided with means of detecting the rotation angle of the sensor of the sensor device to detect the condition of the tire at a predetermined position.

For at least the reasons submitted above, Applicant submits that claim 14 is patentable.

Rejection of claim 18 under § 103(a) over Hiromoto in view of Mackness and

further in view of Balzer

Claim 18 is rejected as allegedly being obvious over Hiromoto and/or Mackness and further in view of Balzer based on the reasons set forth on page 7 of the Office Action.

Applicant notes that claim 18 is directed to, the tire sensor according to claim 6 or 10, *inter alia*, wherein the base station is mounted to a tire rim portion or a valve device installed on the wheel. Hiromoto, however, discloses a transmitter 9, which the Examiner allegedly corresponds to the claimed base station, provided on the inner surface of a tire 2 (see abstract). Applicant, therefore, submits that there is a clear distinction in the structure of the device disclosed in claim 18 to that disclosed by Hiromoto.

For at least the reasons submitted above and by virtue of its dependency from claim 5, Applicant maintains that claim 18 is patentable. Balzer does not make up for the deficiencies of the other applied references.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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